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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/608,637

06/30/2000

Jin Yang

42390.P9429

9275

8791

7590

06/30/2006

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EXAMINER

CRAIG, DWIN M

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/608,637

**Applicant(s)**

YANG, JIN

**Examiner**

Dwin M. Craig

**Art Unit**

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,5,8,14-18 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4, 5, 8, 14-18 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 4, 5, 8, 14-18 and 28 have been presented for reconsideration based on Applicants' amended claim language.

#### ***Response to Arguments***

2. Applicant's arguments filed 4/3/2006 have been fully considered but they are not persuasive. Please see the rejection of Applicants' claims.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 4, 5, 8, 14-18 and 28 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

35 USC § 101 requires that an Applicants' invention disclose a *useful, tangible and concrete* result.

- 3.1 Claims 4, 5, 8, 14-18 and 28 fail to disclose a useful result, although Applicants' specification discloses *automated design verification for large scale integrated circuits* the specification also discloses that the *verification* can be for *other finite state systems*, the currently amended claims teach *verification of other finite state system*, as such the current claim language, even in light of Applicants' specification, fails to disclose a useful result because there is no disclosure in either the claim language or the specification as to what the *other finite state system* would be. Further, the currently claimed limitation of *other finite system* is not tied to the actual

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physical world, for example, a *finite system* could be a finite state machine, which is an abstract concept and does not affect the physical world because it is a theoretical construct.

**3.2** Claims 4, 5, 8, 14-18 and 28 fail to disclose a tangible result. The current claim language discloses, initializing a structure and checking a simulated structure for verifying properties expressed as assertion graph instances however, the current claim language fails to disclose any link to the physical world, manipulation of a assertion graph on a plurality of symbolic lattice domains fails to disclose or suggest any resultant output linking the verification of the large scale integrated circuit to the physical world. Applicants' instant amendments fail to disclose that anything in the physical world is done with the verification of the circuits. The Examiner notes that the current claim language fails to disclose providing a display of the resultant verification to a user as well as providing any signal or file to affect the production of the actual integrated circuit.

**3.3** As regards independent claim 28, the recited means under 112 6<sup>th</sup> paragraph could be interpreted to be the programmed methods as disclosed on page 35 of Applicants' specification. As such, the claimed means amounts to software only, then the claimed system is composed of functional descriptive material, which is non-statutory.

**3.4** Amendment is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 4, 5, 8, 14-18 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4.1 Claims 4, 5, 8, 14-18 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how *a formal verification of a circuit* is performed by *initialization of a symbolic simulation relation for an assertion graph on a first lattice domain*. The Examiner fails to see a linkage in the current claim language between *circuit verification* and manipulation/initialization of an *assertion graph in a first symbolic lattice domain*.

4.2 Claims 4, 5, 8, 14-18 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what the *metes and bounds* are of *other finite state systems*. A review of Applicants' specification has failed to provide a definition of the bounds of the phrase *other finite state system*.

4.3 Amendment is required.

### ***Conclusion***

5. The Examiner notes that 3 attempts were made to contact Applicants' Attorney by telephone, on June 16<sup>th</sup>, 22<sup>nd</sup> and 23<sup>rd</sup>, 2006.

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**5.1** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

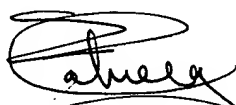
**5.2** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DMC



PRIMARY EXAMINER  
6/27/06